

3 1761 11634688 3

Analytical Studies Branch

THE DISTRIBUTION OF FEDERAL/PROVINCIAL TAXES AND TRANSFERS IN RURAL CANADA

by

Brian B. Murphy

No. 41



Research Paper Series



Statistics
Canada

Statistique
Canada

Canada



ANALYTICAL STUDIES BRANCH RESEARCH PAPER SERIES

The Analytical Studies Branch Research Paper Series provides for the circulation, on a pre-publication basis, of research conducted by Branch staff, visiting Fellows and academic associates. The Research Paper Series is intended to stimulate discussion on a variety of topics including labour, business firm dynamics, pensions, agriculture, mortality, language, immigration, statistical computing and simulation. Readers of the series are encouraged to contact the authors with comments, criticisms and suggestions. A list of titles appears inside the back cover of this paper.

Papers in the series are distributed to Statistics Canada Regional Offices, provincial statistical focal points, research institutes, and specialty libraries. Each paper is catalogued on the DOBIS computer reference system and in various Canadian university library reference systems.

To obtain a collection of abstracts of the papers in the series and/or copies of individual papers (in French or English), please contact:

Publications Review Committee
Analytical Studies Branch, Statistics Canada
24th Floor, R.H. Coats Building
Ottawa, Ontario, K1A 0T6
(613) 951-8213

CA1
BS1
- 1991
R41

THE DISTRIBUTION OF FEDERAL/PROVINCIAL TAXES AND TRANSFERS IN RURAL CANADA

by

Brian B. Murphy

No. 41



**Social and Economic Studies Division
Analytical Studies Branch
Statistics Canada
1991**

prepared for

**Rural and Small Town Canada:
Economic and Social Reality**

**A Conference Organized by Statistics Canada in Co-operation with
Agriculture Canada and the Agriculture & Rural Restructuring Group
Ottawa, October 17-19, 1990**

The analysis presented in this paper is the responsibility of the author and does not necessarily represent the views or policies of Statistics Canada.

Aussi disponible en français



Digitized by the Internet Archive
in 2023 with funding from
University of Toronto

<https://archive.org/details/31761116346883>

Abstract

Despite the lack of specific consideration of rurality in the tax-transfer system, the 1990 tax-transfer system actually imposes lighter tax burdens and significantly more cash transfers to rural residents than to urban residents mainly because of federal programs. With the exception of social assistance, rural Canadians as a group receive higher transfers in every transfer category, especially unemployment insurance and payments for children. Provincial tax and transfer programs, despite their formal relationship to federal taxes, tend to impose a much more consistent burden across urbanization class because they have a higher proportion of regressive commodity taxes.

Many factors give rise to lower income tax liabilities and higher sales tax payments in rural Canada. Families living in rural communities tend to have slightly lower incomes, less employment income and more farm income, larger family sizes and older families than their urban counterparts. They spend a greater proportion of their income on food, electricity, home heating fuels, and automobiles and less on rent, hotels and restaurants and personal business. They show higher rates of self-employment and unemployment.

The evolution of the tax-transfer system between 1984 and 1990 does not change the relative balance between urban and rural Canadians vis-a-vis the burden of net taxes and transfers on individuals and families. It has however shifted rural Canadians on average from net gainers from the system to net contributors to the system.

Key words: taxes, transfers, rural, microsimulation

Introduction

In Canada, the federal and provincial governments levy significant income taxes and pay substantial cash transfers to families and individuals. Particular taxation provisions and transfer programs are highly interconnected and in effect form a single tax-transfer system. Embodied in this system there are judgements about fair treatment of families and individuals in different circumstances. These judgements rarely consider degree of urbanization but rather are the implicit outcomes of historical processes of political debate and compromise.

This paper examines the program specific and cumulative impact of the tax-transfer system on Canadian families. Emphasis is placed on the differences between families living in rural and urban areas. No major government programs are based explicitly on urbanization. The taxes paid to governments and transfer benefits received from them are determined by the rules of the tax-transfer programs. These rules are applied to individuals with a variety of individual and family characteristics. The characteristics are not evenly distributed across the urbanization continuum and give rise to differing relative mixes of taxes and transfers as well as differing overall tax-transfer burdens.

The study first outlines the various types of programs in the tax-transfer system. This is followed by an examination of the characteristics of families and individuals which determine their taxes and transfers across urbanization categories. Next, the distribution of specific tax-transfer elements and the overall system as legislated in 1990 is examined. Finally, at an aggregate level, the 1990 system is contrasted with the tax-transfer system as legislated for 1984.

Public Sector Taxes and Transfers

The system of federal and provincial taxation has three main kinds of taxes borne directly by households; personal income taxes, sales or commodity taxes, and payroll taxes. Households additionally pay many other forms of taxes to governments (e.g. property taxes, utility taxes and various licence fees). These other sub-provincial taxes, while likely to vary between rural and urban centres, have not been included in this analysis because of insufficient data. In general they would tend to result in higher tax burdens in urban areas and reinforce the general findings of this study.

In 1990, personal income tax accounted for about sixty percent of all direct federal and provincial taxes paid by households. An individual's tax liability is largely determined by the level and sources of income as well as by family situation.

Commodity or sales taxes are also levied by both levels of government and accounted for about one quarter of direct federal and provincial taxes in 1990. Different goods and services are taxed at different rates. As such, the proportion of a households income spent on sales taxes will depend on the amount and relative mix of goods purchased. These taxes, to the extent that they are levied at intermediate levels in the production process, are assumed to fully shift forward to consumers.

Payroll taxes are collected from employment earnings. The major such taxes are contributions to fund the Unemployment Insurance program and the Canada Pension Plan. Individual earning levels and employment status are taken into account when determining payroll taxes.

Federal and provincial governments provide substantial cash transfers to households in Canada; over \$50 billion in 1990. These transfers may be classified into three main groups: employment related programs, means tested programs, and demogrants.

Employment related programs are the largest group and accounted for about 40% of all government cash transfers to households in 1990. There are three programs in this group, unemployment insurance, the Canada Pension Plan and the Quebec Pension Plan (C/QPP). Individual unemployment benefits are paid to the unemployed depending on the level of earnings and work history within the past two years. Self-employed persons such as farmers are not eligible for benefits. As such, a region's aggregate unemployment benefits will be largely determined by the unemployment rate. C/QPP retirement benefits are based on an individual's lifetime earnings history as well as the age at which benefits commence. The aggregate Canada pension plan receipts in a given region will be determined mainly by the size of the elderly population.

Means-tested transfer programs take into account the financial resources (usually income) of a family when determining benefits. They include social assistance, the guaranteed income supplement(GIS) for OAS beneficiaries and the spouses allowance(SPA). The child tax credit and federal sales tax credit are also considered means-tested transfer programs in this analysis. In 1990, means-tested programs accounted for almost 30% of federal/provincial cash transfers to households. These programs largely depend on family income; the lower the income the higher the benefits. Social assistance benefits also take into account a wide variety of other factors, such as asset levels and specific expenditure requirements, in determining benefit levels.

Demogrants are cash transfers based solely on the demographic characteristics of individuals(once they are deemed Canadian residents). There are two such programs in Canada, Family Allowances and Old Age Security (OAS). Eligibility and benefits are determined by age and immigration status.

Data and Methods

The analysis uses the Social Policy Simulation Database and Model, a microsimulation model publicly available from Statistics Canada. The SPSD/M is a micro-computer based product designed to analyze the financial interactions between governments and the household sector in Canada (See Bordt et. al. (1990) or Wolfson et. al. (1990), for a description of the SPSD/M). The SPSM calculates the taxes and transfers of a sample of individuals and aggregates them to represent the Canadian population. Using the rules of the 1990 tax transfer system, the simulated incidences of taxes and transfers are examined.

The SPSD/M is based on the Survey of consumer finances and as such on the Labour Force Survey sampling frame. Consequently, the definition of rural is the Labour Force Survey definition; non-self reporting enumeration areas. Towns of several thousand people may thus be considered "rural", as may the fringes of large urban centres. Furthermore, the Labour Force Survey frame does not include large geographical areas of rural Canada. Excluded from the frame are the Yukon and Northwest Territories as well as persons living on reservations. These areas are, however, sparsely populated and their omission does not greatly affect the overall results. The final breakdown of the Canadian population may be seen in Table 1. Note that rural Canada under this definition is the second largest group with over 1.6 million families. Almost 50% of the population is in large urban centres.

Table 1: Census Families by Urbanization Class

Urbanization Class	Census Families	
	(000's)	(%)
500,000 & Over	5,119	49.0
100,000 - 499,999	1,085	10.4
30,000 - 99,999	1,218	11.6
Urban under 30,000	1,416	13.5
Rural	1,618	15.5

The analysis is based on census families including "families" of size one. They are defined as a married couples or single adults and their never married children. This is the family definition used in the determination of most taxes and transfers.

Microsimulation allows us to answer certain hypothetical questions in the absence of current data. For example, the rules and regulations of the tax-transfer system are known in 1990. However, because of delays in survey collection and processing no current data is available to describe the population on which that system actually operated. Therefore, microsimulation is used to apply the rules of the 1990 tax-transfer system to the population as it was in 1986; the most current year of data available at the time of this study. Similarly, the rules of the tax-transfer system in 1984 will be applied to the identical 1986 population.

To reiterate, all figures expressed in this study are in constant 1986 dollars. The descriptive label of 1990 applied to distributions should be interpreted as the 1990 system of taxes and transfers applied in 1986.

This paper addresses three central questions: If the 1990 tax and transfer system were in place in 1986; what would the distribution of tax-transfer expenditures be in rural vs. urban Canada? How would this compare to the 1984 system as it would have applied in 1986? In terms of disposable income, would legislated changes affect the relative position of rural versus urban Canadians?

Determinants of Taxes and Transfers

The individual and family characteristics used to determine taxes and transfers are distributed unevenly across the urbanization continuum. The major determinants to be considered are income, family characteristics, expenditure patterns, labour force status, and other geographic factors.

Income

Personal income taxes, payroll taxes and cash transfers have a progressive structure; higher income individuals receive fewer transfers and pay more taxes as a percentage of their income. Thus systematic differences in income distributions across urbanization levels would give rise to differential taxes and transfers. Figure 1 shows the distribution of income for five different urbanization classes. The top of each box corresponds to the income of the families at the 75th percentile. So, for example, 75 percent of Canadians living in large cities have total incomes less than \$48,000. The mean is indicated by the star. The dashed lines are set at the levels of rural areas to facilitate comparisons.

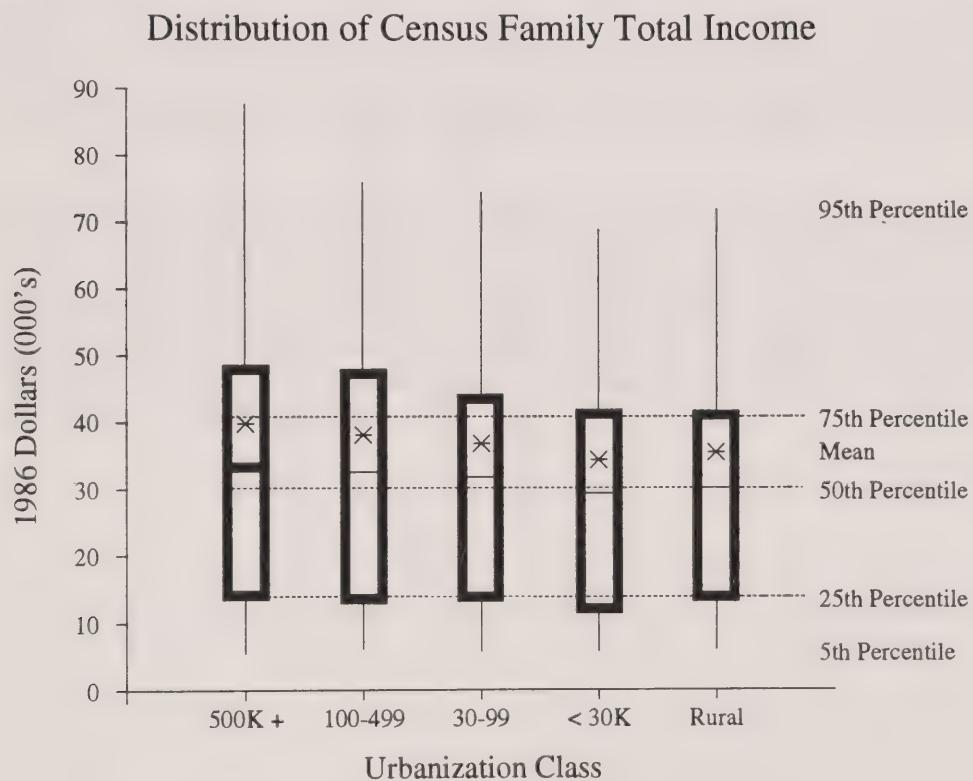


Figure 1: Distribution of Census Family Income

The distribution of total income does not vary a great deal across five different urbanization categories (Figure 1). By examining the dashed line for the 25th percentile (the poorest 25% of census families) we see a virtually no difference across urbanization categories with a slight exception for towns under 30,000. In other words, the poorest 25 percent of families make less than \$13,000 to \$14,000 regardless of the size of urban or rural centre they live in. Average incomes vary by only a few thousand dollars across urbanization classes. It is only in the high end of the income distribution that there is a significant difference. Comparing urbanization classes at the 95th percentile, to be among the richest 5% of rural families requires a total income in excess of \$70,000 while to be one of the richest 5% of metropolitan families requires a total income of almost \$90,000. On average rural Canadian families have less income than urban Canadians and this results mainly from the influence of higher incomes among "rich" Canadians in urban areas.

The source of income affects tax-transfer liabilities and benefits as well as the level of income. Certain types of employment earnings, investments and transfers are subject to different rules in the tax system. Table 2 shows the composition of income from various sources as a percentage of total income. For example, wages and salaries represent 70 percent of total income in large urban centres but only 59 percent in rural areas; an 11 percentage point difference. However, rural families have a larger share of total income from self-employment in both the farm and non-farm components. This narrows the gap in overall employment earnings to 6.5 percent. Net employment earnings receive the same treatment for purposes of personal income taxes.

Government transfers represent a higher percentage of total income for rural families. On average of 17% of rural income comes from government transfers compared to 10% for urban areas. The gap of 7 percentage points approximately offsets the gap in earned income. Not all government transfers are taxable and therefore tax liabilities will be greater on average in large urban areas. Investment income shows a "U" shaped curve. The investments in more rural areas are more retirement pensions and annuities while large centers experience more interest and dividend income. Other income shows no definite trend.

Table 2: Census Family Income Composition (1990)

	Urbanization Class					Canada
	500K Plus	100K 499K	30K 99K	30K Less	Rural	
Income Composition (%)						
Wages	70.2	72.8	69.9	65.1	58.6	68.2
Self-Employment						
Non-Farm	4.8	3.0	3.3	3.6	5.7	4.5
Farm	0.2	0.1	0.2	0.4	4.4	0.8
Investments	10.3	8.9	8.7	9.8	10.6	9.9
Transfers	10.2	11.6	13.2	16.7	17.1	12.5
Other	4.3	3.6	4.7	4.4	3.6	4.1
Head's Percent of Total Income	81.2	82.0	81.1	80.7	78.8	80.8
Average Number of Earners	1.2	1.2	1.2	1.1	1.3	1.2

The degree to which a families income is split among different family members will also affect tax liabilities. Because earners can each claim personal deductions, families with split incomes will experience lower marginal tax rates on average. No real difference exists in the average number of earners per family and a slight difference exists in the proportion of total family income attributable to the head between urban and rural families (Table 2). For example, on average the total income of the head of rural families accounts for 79 percent of total family income compared to 81 percent for urban families. As such, rural families have their incomes slightly more evenly distributed among family members. This will in part reflect the rules for income splitting for self-employed farm income. The net effect is one of reducing the tax burden for rural families.

Family Characteristics

Many federal transfers and tax credits are based on the numbers and ages of children. Some provinces, (notably Quebec) have strong pro-natalist tax-transfer policies which favor families with large numbers of children (Wolfson and Murphy 1990). On average, families living in rural areas have two thirds again as many children as urban families (Table 3). This will result in more transfer payments per family under the family allowance program and the child tax credit. It also allows more tax credits per family for dependant children and potentially more child care expense deductions.

Table 3: Census Family Characteristics by Urbanization Class (1986)

	Urbanization Class					Canada
	500K Plus	100K 499K	30K 99K	30K & Less	Rural	
Average Size	2.23	2.36	2.38	2.39	2.82	2.37
Average # Kids	0.51	0.62	0.61	0.64	0.86	0.61
% Families With Eldest						
Under 25	10.0	10.6	10.2	8.1	5.0	9.0
25-44	44.2	41.9	41.9	38.3	41.4	42.5
45-64	27.5	28.2	28.7	28.2	31.5	28.4
65 & Over	18.3	19.3	19.2	25.4	22.1	20.1

Rural families, or at least the married couples in them, tend to be older (Table 3). The eldest member of a census family is either the head or the spouse. Only 5% of rural families have all members under the age of 25 compared to twice that percentage in large cities. At the other end of the scale, 22% of rural families have the eldest member over age 65 compared with 18% in large urban centres. Note that the highest percentage of old families is 25.4% in urban centres under 30,000. This blip in the trend may be partly explained by the sparseness in rural areas of medical and other services required by the elderly. These demographics will result in higher average payments of transfers to the more rural elderly (OAS/GIS/CPP) and somewhat lower tax liabilities (due to, for example, the age exemption).

Expenditure Patterns

The amount of sales taxes a family pays will depend, in part, on the relative mix of commodities purchased; some commodities having higher sales tax rates. For example the effective retail equivalent sales taxes (the average amount of expenditures collected under a specific tax) on tobacco in Newfoundland in 1986 was 127% while the comparable number for federal import duties was less than 5% in all 40 expenditure categories. Federal commodity tax rates do not vary significantly across urbanization classes (less than half a percent except for excise taxes at almost one percent).

Different provinces have different rates of sales taxes. Provincial retail equivalent rates vary more across urbanization, up to two percentage points. Rates for gasoline and tobacco are higher in rural areas while amusement taxes and liquor taxes are higher in urban areas.

In most spending areas rural Canadians do not significantly differ from their urban counterparts in terms of relative commodity mix of purchases (measured as average percent of household expenditure devoted to certain commodities). The commodities which do display a difference of over half a percentage point across urbanization classes are shown in table 4.

Table 4: Household Expenditures as Percent Total Expenditure (1990)

Expenditure Category	Urbanization Class				
	500K Plus	100K 499K	30K 99K	30K Less	Rural
Food	12.5	13.1	13.6	14.4	15.4
Housing					
Imputed Rent	13.5	16.3	15.2	14.8	16.7
Paid Rent	6.4	5.1	5.3	5.2	2.4
Electricity	2.0	2.2	2.3	2.5	2.8
Other Fuels	0.6	0.9	1.1	1.2	1.3
Transportation					
Automobiles	6.2	6.2	6.3	6.0	6.6
Gasoline	3.4	3.4	3.7	3.8	4.1
Inter-City	2.5	2.4	2.2	2.2	1.9
Hotel & Restaurant	7.6	7.4	7.0	6.6	6.2
Personal Business	5.6	5.8	5.8	5.2	5.3

Source: Statistics Canada, 1986 SPSD/M

The largest differences are found in food, a low tax item, and rents. Rural families have a higher proportion of homeowners and thus the lower percent expenditure on rents. Recall, however, that property taxes are not included in the analysis. While the lower taxed food is a higher percentage of rural spending the higher taxed items of energy and transportation also have a high share of rural expenditures. While there are offsetting items, there is no clear indication from these expenditure patterns what the net effect will be on urban versus rural Canada.

Labour Force Status

Labour force status has a significant effect on the net burden of the tax-transfer system on households. The payroll taxes and income taxes on employment earnings are borne by members of the labour force while over \$10 billion of unemployment insurance is paid to the unemployed. Recall from Table 2 that a significant difference exists in the levels of wages as a share of total income; from 70% in large cities to 59% in rural areas. The labour force participation numbers for 1986 follow this pattern and show 71% of urban individuals aged 15-64 are employed compared to 61% percent of rural individuals. This results in higher taxes for urban families.

The unemployment rate has a twofold effect on aggregate payments of unemployment insurance. The more unemployed the higher the number of beneficiaries. But the unemployment rate in a region will determine the maximum benefits available; more benefits being paid in high unemployment regions of the country. Table 5 shows the annualized unemployment rates by province and class of urbanization in 1986 -- the rates used for the analysis. Some urbanization classes are absent from the table due to the confidentiality measures of the SPSD/M from which this data is drawn. The clear trend is toward higher unemployment rates in rural areas, the prairie provinces being the only significant exception.

Table 5: Annualized Unemployment Rate by Province and Urbanization (1986)

Urban Class	Province									
	Nfld	PEI	NS	NB	Que	Ont	Man	Sask	Alta	BC
500,000+	0.0	0.0	0.0	0.0	10.8	7.5	8.5	0.0	12.1	13.2
100,000	0.0	0.0	0.0	0.0	12.6	10.5	0.0	9.0	0.0	0.0
30,000	0.0	0.0	11.5	10.0	14.5	10.0	0.0	10.8	10.2	14.3
<30,000	15.5	12.8	13.2	14.4	15.9	12.0	8.4	7.9	8.9	17.0
Rural	29.7	12.8	15.2	19.9	16.3	10.3	7.4	6.5	10.1	19.1

Source: Statistics Canada, 1986 SPSD/M

Several other factors which vary by urbanization can in part determine taxes and transfers. Different provincial tax-transfer systems will apply to areas with various concentrations of rural population. However, the bulk of the provincial systems of taxation are determined by the federal system and as such provincial differences will not be pronounced. Certain other measures of the tax-transfer system will vary but these make up a very small proportion of the overall tax-transfer system and are not explicitly considered. (For example the northern deduction will largely benefit rural families).

Incidence of Taxes and Transfers in 1990

Table 6 shows taxes paid as a percentage of total income by type of tax, level of government and urbanization class. As such, it presents a measure of the relative burden of taxation. For example, on average Canadians living in rural areas spent 10% of their total income on federal income, sales and payroll taxes compared with 12% in large urban centres; a two percentage point difference. As we would expect from the preceding discussion, the burden of federal taxation decreases steadily from urban to rural Canada because of the progressive rate structure, lower percentage of earned income, higher proportion of transfer income, and greater children's benefits. Federal sales taxes are higher in rural Canada mainly because of higher energy and transportation costs. Higher unemployment rates translate into lower unemployment insurance

contributions. The slightly higher C/QPP contributions in rural areas reflect the higher percentage of self-employment income. Self-employed persons contribute twice as much as employees who have their contributions matched by their employers.

Table 6: Taxes as Percent of Total Income by Urbanization Class (1990)

	Urbanization Class					Canada
	500K Plus	100K 499K	30K 99K	30K & Less	Rural	
<u>Federal</u>	12.0	11.6	11.4	10.6	10.2	11.4
Income Tax	10.4	9.9	9.7	8.9	8.5	9.8
Sales Tax	4.4	4.4	4.5	4.7	4.9	4.5
Payroll (UI)	1.2	1.3	1.3	1.2	1.1	1.2
Payroll (C/QPP)	1.1	1.1	1.1	1.1	1.2	1.1
	12.1	12.1	11.3	11.2	11.1	11.8
<u>Provincial</u>						
Income Tax	7.8	7.4	6.8	6.6	6.5	7.3
Sales Tax	4.2	4.6	4.5	4.6	4.6	4.4

Provincially the story is different. Provincial taxes show about half the increase that federal taxes do between rural and urban areas. The income taxes follow the same general pattern as the federal taxes to which they are tied. However, they represent a smaller proportion of total taxes and the progressive rate structure is offset by the regressive provincial sales taxes.

Federal transfers account for a much larger share(16%) of rural residents' total income than of urban residents' total income at 9% (Table 7). In other words, rural families receive on average over three-quarters again as much of their income in federal transfers than their counterparts in large cities. Much of the difference is accounted for by the unemployment insurance program, 3% in absolute terms or over twice as much as urban centers as a percent of total income. Children's benefits (family allowances and the child tax credit) as a percent of total income are 1% higher in rural areas than in urban areas because rural families have more children on average and lower average incomes. This rural-urban difference represents a doubling of average benefits(as a percent of total income) for rural families compared to urban families.

Table 7: Transfers as Percent of Total Income by Urbanization Class (1990)

	Urbanization Class					Canada
	500K Plus	100K 499K	30K 99K	30K & Less	Rural	
<u>Federal</u>	9.0	10.3	12.0	15.5	16.0	11.3
Elderly	4.5	5.3	5.9	8.1	6.9	5.5
OAS	2.0	2.3	2.5	3.6	3.1	2.5
GIS/SPA	0.7	0.9	1.1	1.7	1.7	1.0
C/QPP	1.8	2.0	2.3	2.7	2.1	2.0
Children	0.8	1.0	1.1	1.3	1.9	1.1
Unemployed	2.2	2.3	3.1	4.1	5.1	2.9
Assistance	0.8	0.9	1.0	1.0	0.9	0.9
<u>Provincial</u>	1.3	1.5	1.4	1.6	1.5	1.4

The elderly transfer programs as a whole are 2.4 percentage points higher in rural areas than large urban centres, from 6.9% to 4.5%. However, in urban centres under 30,000, the urbanization class with the highest percentage of elderly families, the percent of income due to OAS/GIS/SPA and the C/QPP rises to over 8%. Of the three individual elderly programs the C/QPP shows the least variation. The expected increase in relative rural benefits is offset by differences in regional employment rates and average wages as C/QPP benefits are determined based on average annual earnings. Should these latter factors be even across urbanization classes the variation should be closer to the roughly 1% difference in OAS resulting from age composition differences. The Social assistance payments are roughly even across urbanization classes.

Provincial transfer payments do not vary significantly by urbanization. These payments are largely made up of social assistance payments as well as some children's benefits.

Figure 2 compares the combined effect of taxes and transfers, (the net "burden" of the tax-transfer system) by urbanization and income. The horizontal axis divides the population according to deciles (ten groups of equal size arranged by ascending income). The vertical axis shows average taxes minus transfers as a percentage of total income. There are five lines plotted on the graph, one for each urbanization category. Where the lines are below the "0" line parallel to the horizontal axis, on average families receive more transfers than they pay in taxes. So, for example, the poorest 10% of families living in large urban centres receive on average about half of their total income in transfers from the federal and provincial governments. Or at the other end of the graph, the richest 10% of Canadians in all urbanization groups pay on average between 25% and 30% of their total income in federal and provincial taxes.

Taxes Less Transfers as Percentage of Total Income (1990)

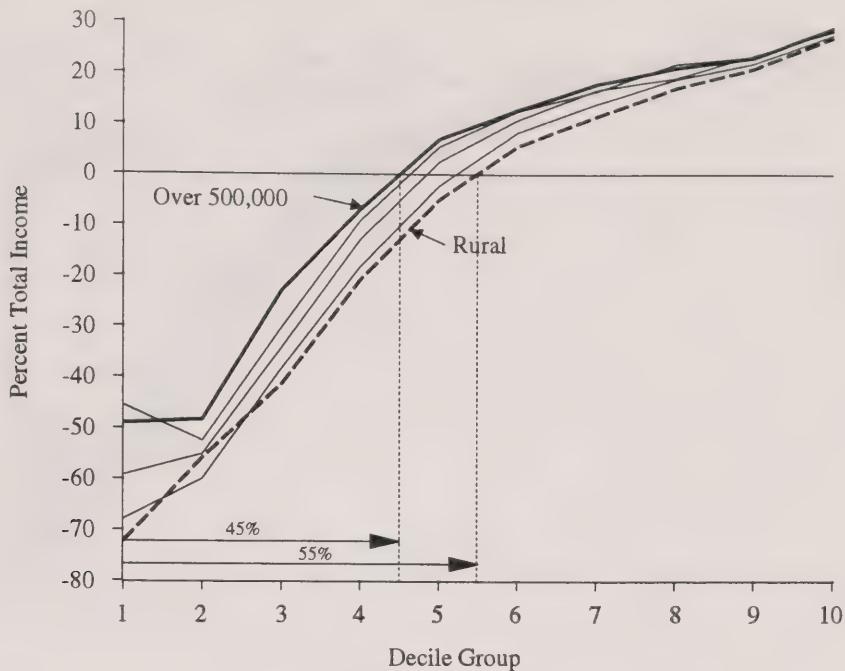


Figure 2: Net Impact of Tax-Transfer System by Income Decile Group

The general slope of the five curves shows the progressive structure of the tax-transfer system; families with higher incomes pay a greater percentage of their income in taxes. About 45% of the poorest families living in large cities receive more transfers than they pay in taxes (Figure 2). The comparable number for rural families is 55%, a significant gap of 10% of families. Also note that the bottom 10% of rural families receive, on average, over 70% of their income from transfer payments. With minor exceptions, rural families across all income classes have a lower net burden and the difference narrows the higher the income class. Note the fanning out of the difference between urban and rural as one moves from the high to lower income Canadians.

Figure 3 separates the influence of the federal and provincial governments on the overall net burden. The majority of the progressivity results from the federal system. Also, the difference in net impacts between urban and rural families is mostly attributable to the federal system (mainly because of transfers in the lower decile groups). Note that for federal taxes and transfers, over 65% of rural families are in a net gain position compared with just over 50% for families in large urban centres. This is a 5% larger gap than seen for the combined systems in figure 2. The corresponding provincial number shows about 25% of families in a net gain position.

Taxes Less Transfers as Percentage of Total Income (1990)

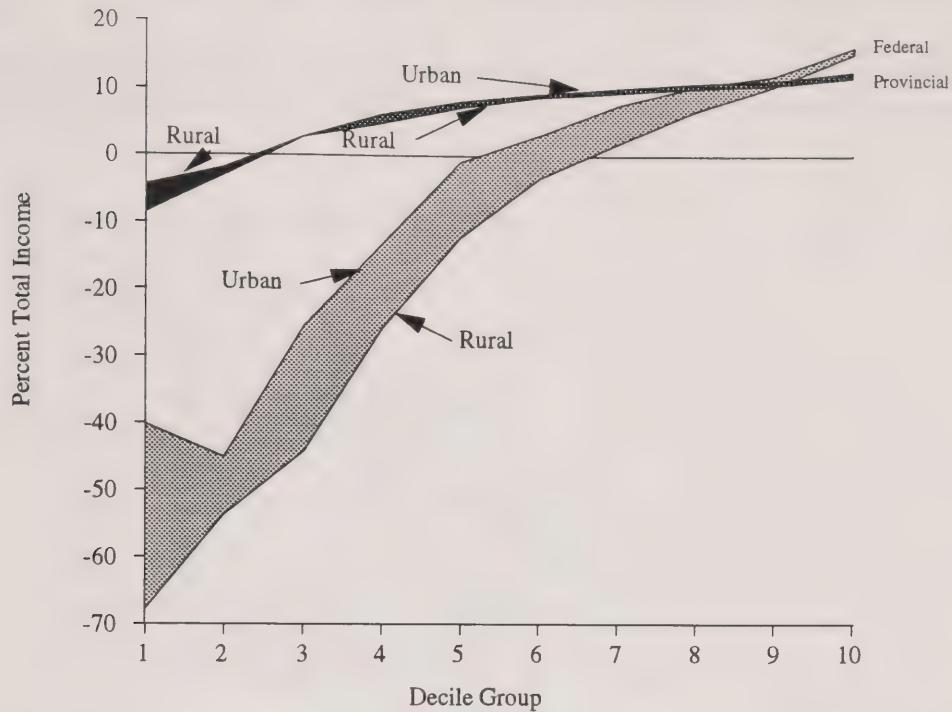


Figure 3: Net Impact of Tax-Transfer System by Province & Income Decile Group

A close examination also shows that for provincial net balance, the rural families are in a worse position than their urban counterparts in the bottom three decile groups; a reversal of the dominant federal trend. The predominance of regressive sales and commodity taxes at the low end of the income distribution is responsible. At the bottom decile this gap represents close to 5% of income.

Tax-Transfer Changes 1984-1990

The Canadian tax system has undergone significant change between the 1984 and 1990 tax years. The wide range of changes included enrichment of the GIS, Phase I of tax reform, partial de-indexation of the income tax system, the redesign of the child benefit system the "repayment of social transfers" which apply to family allowances and old age security (the so called claw-backs), changes to the unemployment insurance program, and many changes in commodity taxation. This analysis, as stated earlier, compares the tax-transfer systems in place in calendar year 1984 with those in place in 1990. It should be noted that the differences are therefore not solely attributable to changes introduced by the Conservative government. (An analysis restricted to Progressive Conservative changes since 1984 was performed in Grady(1990)). Many of the

changes to the system have had immediate impacts while others will take some time for their full impact to be realized; in particular the partial de-indexation of the tax system (Murphy and Wolfson 1991).

The following list gives a sense of the range of income-tax, payroll-tax, and transfer changes by indicating some of the adjustments to the tax system which have been incorporated into the analysis.

TAXES

- Repayment of social transfers (OAS/FA)
- High income surtax
- Introduction of minimum tax
- Increased tax on dividends
- Increase in disability deduction
- Increase in child care expense deduction
- Partial de-indexation of tax system
- Lifetime capital gains exemption
- Exemptions to credits and rate modification
- Increase in inclusion rate for capital gains
- Reduction of dividend gross-up and tax credit
- Elimination of investment income deduction
- Elimination of employment expense deduction
- Family Allowance reported by higher income spouse

TRANSFERS

- GIS enrichment
- Partial de-indexing of FA & Child Tax Credit
- Increase in Child Tax Credit
- Reduction of Child Tax Credit threshold
- Modification of child exemption/credit
- Child Tax Credit supplement
- Extension of Widowed Spouses Allowance
- Introduction and enhancement of refundable sales tax credit
- Unemployment insurance benefits and contributions
- Increase in C/QPP contribution rates

Many changes to the commodity tax system occurred from 1984 through 1990. This analysis accounts for numerous increases in excise duties on tobacco, alcohol, gasoline and communications as well as increases in the manufacturers sales tax, the airport tax and a new tax on telecommunication services. Because of insufficient data, some changes were excluded from the analysis. These omissions include extensions of the federal sales tax to confectioneries, soft drinks, health foods, pet foods and insulation, and several exemptions and special provisions. These omissions have only a small effect on both the aggregate and distributional results.

Impact of Tax changes 1984--1990

None of the changes during the 1984 to 1990 period were specifically targeted at the rural population. This analysis does not consider the individual impacts of specific measures. Rather, the aim is to ascertain whether the overall structure of taxation in rural versus urban areas has changed as a consequence of the cumulative effect of the changes.

Taxes Less Transfers as Percentage of Total Income

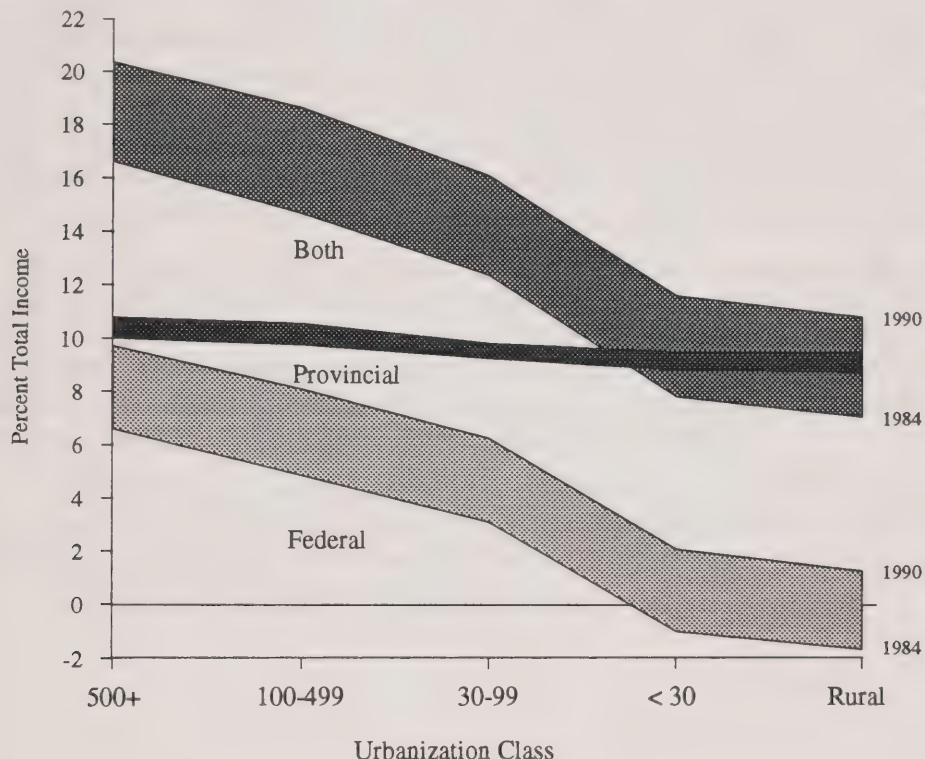


Figure 4: Net Impact of Tax-Transfer System by Income Decile Group

The changes introduced have not significantly altered the relative positions of urban versus rural families (Figure 4). This is expected since most changes were made to the tax system and the transfer system is largely responsible for the better net position of rural versus urban families.

On average, families in large cities paid just over 20% of their total income in taxes in 1990. Rural families paid about half that amount (11%). In 1984 the corresponding figures were 16.5% in urban centres and again about half, or 7.5%, in rural areas. The findings are the same for both levels of government. The striking feature is the overall rise in the net burden of taxation; an almost 4% average increase in the percent of income devoted to taxes. The structure of this increase was itself progressive, (Grady 1990), and thus the relative positions of rural and

urban Canadians stayed the same. Note however, that the magnitude of the increase for federal taxes and transfers made an accounting change to rural Canadians. Under the 1984 tax-transfer system rural Canadians on average received almost two percent of total income as net transfer payments. Under the 1990 tax-transfer system the same families on average were paying two percent of that same income in taxes.

Conclusions

Despite the lack of specific consideration of rurality in the tax-transfer system, the 1990 tax-transfer system actually imposes lighter tax burdens and significantly more cash transfers to rural residents than urban residents mainly because of federal programs. With the exception of social assistance, rural Canadians receive higher transfers in every transfer category, especially unemployment insurance and payments for children. Provincial tax and transfer programs, despite their formal relationship to federal taxes, tend to impose a more consistent burden across urbanization classes because they have a higher proportion of regressive commodity taxes.

Many factors give rise to lower income tax liabilities and higher sales tax payments in rural Canada. Families living in rural communities tend to have slightly lower incomes, less employment income and more farm income, larger family sizes and older families than their urban counterparts. They spend a greater proportion of their income on food, electricity, home heating fuels, and automobiles and somewhat less on rent, hotels and restaurants and personal business. They show higher rates of self-employment and unemployment.

The evolution of the tax-transfer system between 1984 and 1990 does not change the relative balance between urban and rural Canadians vis a vis the burden of net taxes and transfers on individuals and families. It has however shifted rural Canadians on average from net gainers from the system to net contributors to the system.

References

GRADY, PATRICK (1990); "The Distributional Impact of the Federal Tax and Transfer Changes Introduced Since 1984", 38 Canadian Tax Journal, (March/April), 286-297.

STATISTICS CANADA (1990), "SPSD/M Version 4.1 documentation: Reference Manual", Ottawa

WOLFSON M.C. and B.B. MURPHY, (1990); "The Role of Equivalence Scales in Canadian Public Policy", a paper presented to the Seminaire de l'Association Europeene pour l'Etude de la Population sur "Familles et niveaux de vie: observations et analyse" Barcelona, October.

BORDT, MICHAEL, GRANT CAMERON, STEPHEN GRIBBLE, BRIAN MURPHY, GEOFF ROWE, AND MICHAEL WOLFSON (1990); "The Social Policy Simulation Database and Model: An Integrated Tool for Tax-Transfer Policy Analysis", 38 Canadian Tax Journal, (January/February), 48-65.

MURPHY B.B., and M.C. WOLFSON (1990); "When the Baby Boom Grows Old: Impacts on Canada's Public Sector", a paper presented to the United Nations Economic Commission for Europe, Seminar on Demographic and Economic Consequences and Implications of Changing Population Age Structure, Ottawa, September.

WOLFSON, MICHAEL, STEPHEN GRIBBLE, MICHAEL BORDT, BRIAN MURPHY, AND GEOFF ROWE (1990); "The Social Policy Simulation Database and Model: An Example of Survey and Administrative Data Integration", (May 1989), 69 Survey of Current Business, 36-40.

ANALYTICAL STUDIES BRANCH
RESEARCH PAPER SERIES

No.

1. *Behavioural Response in the Context of Socio-Economic Microanalytic Simulation*, **Lars Osberg**
2. *Unemployment and Training*, **Garnett Picot**
3. *Homemaker Pensions and Lifetime Redistribution*, **Michael Wolfson**
4. *Modelling the Lifetime Employment Patterns of Canadians*, **Garnett Picot**
5. *Job Loss and Labour Market Adjustment in the Canadian Economy*, **Garnett Picot and Ted Wannell**
6. *A System of Health Statistics: Toward a New Conceptual Framework for Integrating Health Data*, **Michael C. Wolfson**
7. *A Prototype Micro-Macro Link for the Canadian Household Sector*, **Hans J. Adler and Michael C. Wolfson**
8. *Notes on Corporate Concentration and Canada's Income Tax*, **Michael C. Wolfson**
9. *The Expanding Middle: Some Canadian Evidence on the Deskilling Debate*, **John Myles**
10. *The Rise of the Conglomerate Economy*, **Jorge Niosi**
11. *Energy Analysis of Canadian External Trade: 1971 and 1976*, **K.E. Hamilton**
12. *Net and Gross Rates of Land Concentration*, **Ray D. Bollman and Philip Ehrensaft**
13. *Cause-Deleted Life Tables for Canada (1921 to 1981): An Approach Towards Analyzing Epidemiologic Transition*, **Dhruva Nagur and Michael Nagrodska**
14. *The Distribution of the Frequency of Occurrence of Nucleotide Subsequences, Based on Their Overlap Capability*, **Jane F. Gentleman and Ronald C. Mullin**
15. *Immigration and the Ethnolinguistic Character of Canada and Quebec*, **Réjean Lachapelle**
16. *Integration of Canadian Farm and Off-Farm Markets and the Off-Farm Work of Women, Men and Children*, **Ray D. Bollman and Pamela Smith**
17. *Wages and Jobs in the 1980s: Changing Youth Wages and the Declining Middle*, **J. Myles, G. Picot and T. Wannell**
18. *A Profile of Farmers with Computers*, **Ray D. Bollman**
19. *Mortality Risk Distributions: A Life Table Analysis*, **Geoff Rowe**

20. *Industrial Classification in the Canadian Census of Manufactures: Automated Verification Using Product Data*, **John S. Crysdale**

21. *Consumption, Income and Retirement*, **A.L. Robb and J.B. Burbridge**

22. *Job Turnover in Canada's Manufacturing Sector*, **John R. Baldwin and Paul K. Gorecki**

23. Series on *The Dynamics of the Competitive Process*, **John R. Baldwin and Paul K. Gorecki**
A. *Firm Entry and Exit Within the Canadian Manufacturing Sector*.
B. *Intra-Industry Mobility in the Canadian Manufacturing Sector*.
C. *Measuring Entry and Exit in Canadian Manufacturing: Methodology*
D. *The Contribution of the Competitive Process to Productivity Growth: The Role of Firm and Plant Turnover*.
E. *Mergers and the Competitive Process*.
F. *(in preparation)*
G. *Concentration Statistics as Predictors of the Intensity of Competition*
H. *The Relationship Between Mobility and Concentration for the Canadian Manufacturing Sector*

24. *Mainframe SAS Enhancements in Support of Exploratory Data Analysis*, **Richard Johnson and Jane F. Gentleman**

25. *Dimensions of Labour Market Change in Canada: Intersectoral Shifts, Job and Worker Turnover*, **John R. Baldwin and Paul K. Gorecki**

26. *The Persistent Gap: Exploring the Earnings Differential Between Recent Male and Female Postsecondary Graduates*, **Ted Wannell**

27. *Estimating Agricultural Soil Erosion Losses From Census of Agriculture Crop Coverage Data*, **Douglas F. Trant**

28. *Good Jobs/Bad Jobs and the Declining Middle: 1967-1986*, **Garnett Picot, John Myles, Ted Wannell**

29. *Longitudinal Career Data for Selected Cohorts of Men and Women in the Public Service, 1978-1987*, **Garnett Picot and Ted Wannell**

30. *Earnings and Death - Effects Over a Quarter Century*, **Michael Wolfson, Geoff Rowe, Jane F. Gentleman and Monica Tomiak**

31. *Firm Response to Price Uncertainty: Tripartite Stabilization and the Western Canadian Cattle Industry*, **Theodore M. Horbulyk**

32. *Smoothing Procedures for Simulated Longitudinal Microdata*, **Jane F. Gentleman, Dale Robertson and Monica Tomiak**

33. *Patterns of Canadian Foreign Direct Investment Abroad*, **Paul K. Gorecki**

34. *POHEM - A New Approach to the Estimation of Health Status Adjusted Life Expectancy*, Michael C. Wolfson
35. *Canadian Jobs and Firm Size: Do Smaller Firms Pay Less?*, René Morissette
36. *Distinguishing Characteristics of Foreign High Technology Acquisitions in Canada's Manufacturing Sector*, John R. Baldwin and Paul K. Gorecki
37. *Industry Efficiency and Plant Turnover in the Canadian Manufacturing Sector*, John R. Baldwin
38. *When the Baby Boom Grows Old: Impacts on Canada's Public Sector*, Brian B. Murphy and Michael C. Wolfson
39. *Trends in the Distribution of Employment by Employer Size: Recent Canadian Evidence*, Ted Wannell
40. *Small Communities in Atlantic Canada: Their Industrial Structure and Labour Market Conditions in the Early 1980s*, Garnett Picot and John Heath
41. *The Distribution of Federal/Provincial Taxes and Transfers in Rural Canada*, Brian B. Murphy

For further information, contact the Chairperson, Publications Review Committee, Analytical Studies Branch, R.H. Coats Bldg., 24th Floor, Statistics Canada, Tunney's Pasture, Ottawa, Ontario K1A 0T6, (613) 951-8213.

